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COVER: Hunters have always considered the rugged, fast-flying canvasback a prize, because of its large size, beauty, and excellence for the table. This acrylic painting was done for *Virginia Wildlife* by Carl C. Knuth, Fond du Lac, Wisconsin.

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EDITORIAL

Turning Point?

A year ago, in this space in the January, 1970, *Virginia Wildlife*, it was noted that in the decade of the sixties people had become aware as never before of the degradation of the environment in which they lived.

Today, a year later, it seems no exaggeration to say that we have witnessed an almost explosive transition of this awareness into genuine concern, in the fields of ecology and the human environment which for so long came in for so little public attention. The spreading conviction that man has vital links with the land and its resources, and with the other living creatures which inhabit it, and that in degrading the quality of its own environment the human race is courting disaster, could well result in 1970 going down in history as the year of the great environmental awakening, and the seventies becoming the decade of the great environmental turnaround.

To be sure, the vital relationships between man and his environment have been well known, and often pointed out in the past, by people generally considered to be fanatical naturalists, zealous pessimists, or prophets of doom. In fact, warnings of impending disaster have been largely ignored since the Prophet Jeremiah, speaking the word of the Lord to the house of Jacob and the families of Israel, said: "I brought you into a plentiful country, to eat the fruit thereof and the goodness thereof; but when you entered you defiled my land, and made mine heritage an abomination."

In America, talk about resource destruction and the need for conservation has never made serious inroads upon the abiding optimism that ever expanding scientific knowledge and technology can continue indefinitely to mass produce more and more wealth, comfort and leisure for more and more people, without any constraint imposed by a narrowing resource base. Moreover, there has been, and still is, a deep suspicion that anything left in its natural state is unproductive, and that non-productivity represents foregone opportunity, and hence waste. This has been the basic, and often false, criterion in appraising any undrained wetland, any unstraightened and unchannelled stream, any undammed river, any unharvested woodland, any uncultivated field corner or brushy fencerow.

The real stimulus for the recent awakening was a growing coefficient of friction between a progressively deteriorating human environment and the people who had to live in it. Seeking relief from the complexities of modern society in uncrowded and unspoiled surroundings, they discovered that such places were becoming hard if not impossible to find. Choked with smog, threatened by growing accumulations of wastes, overwhelmed by the sheer magnitude of the urban-industrial complex and its human problems, they suddenly questioned the proposition that further growth and progress in the direction we have been going are cures for the nation's ills, and began to doubt that the world can support indefinitely even its present human population at a respectable standard of living.

A new generation finds themselves about to take over management of a world nobody seems to understand any more, a world suffering from massive frustrations for lack of guidance toward worthy and attainable goals. Never in all history has there been such a revolution in human thought and habit as will be necessary if people are to reorient their values and objectives and face up squarely to their population and environmental problems. But it is here that restive young people have found a genuine cause, and have identified their real beef against the establishment. They are demanding a better world, and they just might get it. And the decade of the seventies may prove to be the turning point.—J.F.Mc.

LETTERS

Field Dressing Deer

PLEASE CLARIFY something for me. Can a deer be field dressed before being taken to a checking station, provided the sex organs are left intact for proper identification of the sex?

I have to hunt by myself most of the time, so if I ever do get a deer the time and effort it will take to get the deer back to the vehicle and loaded to take to the checking station may be quite a factor. I would not want to risk spoiling the meat by leaving the paunch and intestines in the carcass too long.

Howard E. Korb
Victoria

You may field dress your deer before taking it to a checking station. Regulations require you not to destroy the identity (sex) of any deer until it is checked and tagged. Also, you should not dismember (such as by quartering) any deer before it is checked, or remove the head if the season is open on antlered deer only.—Ed.

Cats!

I would like to know if the household cat is doing his catly duties, or is he out at night destroying small game.

I love rabbit hunting with my beagles. I buy county tags for them. Why can't the cat owners do the same with their cats?

Or, better yet, let's have one year open season on house cats.

James O. Foster
Alexandria

Open Letter to Sportsmen

DURING the past year, I have heard game wardens called all sorts of names, some of which could not even be printed. I have worked with several game wardens on the job, and I have never met a more disciplined and good natured bunch of men. I have seen them go out of their way to assist sportsmen, always ready with the answers to questions asked by the sportsmen. Game wardens catch too much blame, for reasons that are out of their control. We hear too much griping about the stocking of streams, the stocking of our woodlands, and hunting and fishing out of season. If you take each sportsman as an individual, or the so called sportsman, you will find that the hunting and fishing done out of season is done by the ones that do the most griping and complaining. The warden does an excellent job in patrolling his territory, which is usually larger than one man could possibly keep an eye on all the time. There are just too many places for him to be at the same time. Stop and think for a minute what would happen without the wardens that work all hours of the day and night. There would be no trout on opening day, no squirrels, no deer or turkey, just a lot of empty territory to stare at. All of the fish and wildlife that are here are for our enjoyment and satisfaction, so help abide by the laws and quit giving our game wardens so much blame that they certainly do not deserve.

Russell E. Whited
Cedar Bluff

BEAR TOLLEY

By T. EDWARD ZIMMERMAN, *Buchanan*
and ARTHUR A. DUGDALE, *Ashland*

Great Hunter of Long Ago

WHEN motorists enjoy the beautiful scenery along the Blue Ridge Parkway in the Jefferson National Forest, Virginia, near the Peaks of Otter, they don't know that this was the home and happy hunting grounds of a famous bear hunter of long ago. Time has almost obliterated the story of his remarkable feats and accomplishments, and no monument perpetuates his memory. Yet today many sportsmen and relatives of his friends in Virginia's mountains remember the name and achievements of "Bear Tolley," and his unique way of life.

Archibald Tolley, affectionately known to his friends and admirers as "Bear Tolley," was born in 1801, in Slate Quarry Hollow at the foot of Peavine Mountain in Amherst County, Virginia. This great hunter died in 1901, and was bear hunting alone several weeks before he died of blood poisoning, caused by a severe scratch from a nail in his shoe. His great grandson, John R. Tolley of Glasgow, Virginia, substantiates the above dates and cause of death.

Tolley's bear hunting career was begun in that vicinity during his youth; it later became his only sport and avocation, and his chief means of earning a living, by selling bear meat. Little is known of his family in his younger days. It is known that he had four daughters and one son, and that he was married twice. It is not known whether he had any brothers or sisters, or what his father did to earn a living in that austere mountain country.

However, it is known that school attendance and an education were not available to him, and that his chief interest in life soon became bear hunting. He became an expert marksman with his ancient, long barreled, muzzle-loading mountain rifle. Of course, he acquired some hounds—a necessity in his business. It is said these dogs were a motley group, of nondescript ancestry! Later his pack numbered fifteen to eighteen. He trained those that met his rigid requirements—strict obedience, fearlessness, and the ability to trail and "tree" bears, and to do it *his* way. Since he hunted on foot, he trained his dogs to trail the quarry not too fast for him to keep near them.

His tactics were, once a bear was jumped and sighted, to keep on his trail relentlessly, until from sheer exhaustion bruin sought refuge in a cave or tree. It was not unusual to run the same bear for two or three days, before he was finally killed.

It is said that Tolley rarely lost a bear that his hounds were running. Once he actually ran a bear from Purgatory Mountain (near Apple Orchard Mountain) until he finally killed it near Clifton Forge, after a chase of some thirty-five miles!

When darkness descended on this unique team while the chase was on, Tolley would call off the dogs with his horn, seek any semblance of shelter available near the trail, such as a cave, or low branched pine or hemlock tree. Then he gave each hound half a corn pone from his knapsack, ate one himself and bedded down with his blanket and the dogs lying close to him, to help provide body warmth.

When first signs of dawn appeared, they arose, the man packed his few belongings, and they were off again on the chase. What did Bear Tolley take on those long hunts? Only bare necessities! A blanket, his long rifle, hunting horn, powder horn containing black powder for his muzzle-loading rifle, bullet pouch containing lead bullets he made in a mould on the hearth of his fireplace at home. He also took a sharp hunting knife and a box of matches. The knife was used as a weapon, should a single bullet fail to kill the bear, and it attacked him. He also used the knife to field dress the bear.

Let's look at the real "Bear Tolley," the softer side that is not apparent at first sight. He was genuinely fond of young people, especially boys, and delighted in giving them their first lessons in rifle handling, its care, safety, and in marksmanship.

Another well known characteristic of this pioneer huntsman was strict and absolute honesty. Those who knew him well said he was "honest as the day is long," and he expected to receive honesty from everyone with whom he came in contact.

He was careless about his dress and appearance—rather disheveled, with long hair, mustache, and in later years he had a white beard. Tolley was lean, like his hounds, for a long chase!

But alas, it must be admitted, Bear Tolley had a besetting fault—profanity in the chronic stages! He was fluent with

Bear Tolley

choice curse words and used them skillfully. But never did he use them to offend anyone, or around children. They were a harmless, colorful, expressive part of his vocabulary.

In his younger days Bear Tolley was agile as a wildcat, strong as a lion, clever as a fox, and had the curiosity, persistance and determination of a bear. There is no wonder he acquired that appropriate name!

Having observed and pursued bears since childhood, he knew their habits, games, likes and dislikes, what foods they ate at various seasons, and their many tricks in eluding hounds and the hunter. Therefore in his familiar mountain bailiwick, he knew about where to find bears at certain seasons and times of day.

Tolley knew that usually, when bears are being chased up a mountain, they travel the hollows as they narrow to draws and sloughs. When they are pursued down a mountain, they come off the roughest, steepest points available.

This remarkable man developed such a love of nature and

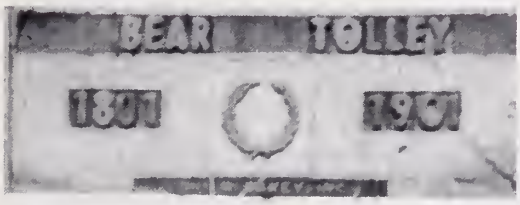
his mountains, and such a deep interest in the black bear and his fascinating habits, his playful, mischievious tricks and pranks, that it became almost an obsession with him. He doubtless knew of the complete education and preparation that adult bears give their cubs for the rugged life they faced, and surely he respected and admired them for that.

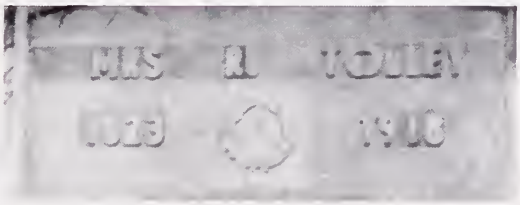
Bear Tolley became a legend in his own beloved mountain area, and many stories are still told of his remarkable exploits. When he was still a young man, his quarry became scarce in his home section, and he moved to Hunting Creek in Bedford County. He must have lived there for quite a long time, for he did a lot of hunting in that vicinity.

Probably in early middle age, Tolley again felt the urge to move, where more bears were available to hunt. Miss Bertha Pectin, who then owned Purgatory Mountain, located between Buchanan and the Peaks of Otter, gave Bear Tolley ten acres of land on top of that rugged mountain. It was a grassy plateau with enough open land for a log cabin, a large garden plot, and a few acres on which to grow corn and a little hay for winter feed. He kept a horse, a cow, and a small flock of chickens. He also raised a few hogs, and each fall he let them out to forage and fatten on chestnuts and acorns, which were plentiful. A good spring nearby provided a dependable water supply, even though it was on top of a mountain!

A weekly trip to Buchanan, either walking or on horseback, enabled him to sell eggs and some vegetables in season, and to buy staple groceries. Local citizens enjoyed hearing Bear Tolley tell some of his exciting adventures with bruin. It is said that he never bragged about his own hunting feats, but always gave credit to his dogs for any victory that was won.

Although Bear Tolley had friends he visited, in bear hunting he was a "loner." He nearly always hunted alone with his beloved dogs that he respected as people. When one of his faithful hounds died, or was killed by a bear, Tolley buried it in his dog cemetery, near his cabin.





The graves of Bear Tolley and Mrs. Tolley are in Fairview Cemetery, Buchanan.

A close affinity grew and flourished between this intrepid man and his dogs, that few people could understand or imagine. They actually sensed what each other expected or wanted, or sensed what the other would do next, in combat with bruin.

On the hunt in "close quarters," the hounds were expected to rush in and take hold of the bear on command, vice-like teeth locked if necessary, until the death of either bear or dog occured. Bear hunting with them was serious business—a matter of life and death—and a dog's avoiding imminent danger when ordered to attack could not be tolerated.

There is no accurate record of the number of bears that Tolley killed in his long lifetime. The reports vary from 99 to 365. However, his relatvies believe that he killed more than 250 bruins.

Some of the mountains, peaks and other landmarks in the general vicinity of Purgatory Mountain, all part of Tolley's hunting grounds, are Petite Gap, Thunder Ridge, Arnold's Valley, and a rugged area called "The Devil's Hopper." Also there are five ridges—Gunstock, Head Foremost, Camping, Wilson and Piney. Others are Apple Orchard Mountain, big and Little Harkening Hill, Backbone Mountain, Bryant's and Buzzard's Ridges, and the twin Peaks of Otter.

Although Bear Tolley hunted alone by preference, he enjoyed brief visits with his mountain neighbors. Some of these were the Riders of Rider's Gap, between the two Harkening Hills, the Floyds of Floyd's Fields, and the Parkers of Parker's Gap.

A wonderful thing happened to Bear Tolley, probably after he had reached eighty years of age, and was still hunting vigorously. A good friend and admirer of his gave him a new rifle—a five shot, lever action, repeating rifle. In exchange for this remarkable gift, Tolley gave the friend his old Kentucky muzzle-loading rifle, which the new owner highly prized as an antique.

Mere words cannot describe the thrill and joy that this wonderful rifle afforded the old hunter. It was much lighter, shorter, and now he could shoot five times in rapid succession, without reloading! No longer did he fear the awful death that could come to him, should his first shot wound a bear. Surely no millionaire has ever felt richer than Bear Tolley when he received his wonderful new rifle.

Soon after he received this gift, he was hunting on a mountain above Big Island, and surprised two large bears and three smaller ones. They were probably feasting on acorns or chestnuts, and doubtless had not heard that Bear Tolley had a new rifle! He killed all five of them, and alone, dragged them down the mountain, beside the Chesapeake and Ohio Railroad tracks, waited for and flagged the local freight train, whose crew helped him load them on a flatcar, and unloaded them for him at Buchanan station. This was doubtless his luckiest and most successful bear hunting trip of his long career.

Some of the true stories regarding this rugged hunter have long outlived him, and they will be told in hunting camps for many years to come. Once a group of city sportsmen urged Bear Tolley to take them on a hunt for his favorite quarry, to which he reluctantly agreed. After placing the men on likely stands along a road leading down the mountain, he took his hounds to the other side of that ridge, and soon had a bear on the run. It headed across the mountain, near the waiting men. Tolley took a cut to join the men. Soon he heard the good news—the short, excited barks of his hounds that told him they had "treed" the bear.

Tolley yelled as he ran up the mountain, toward the waiting men, "Wait 'til I get there; don't shoot 'til I come!" He found the city men excitedly waiting. The dogs were frantic, and tension was high. Tolley approached them walking, giving himself time to get his wind, after running up the mountain. The men had their rifles raised and aimed, waiting for his command to shoot. It never came. Instead, Tolley raised his own rifle and killed the bear himself. Then, pointing at the dead bear on the ground, he uttered these famous words—"Thar she is, boys, fresh b'ar meat; you can have all you want for a dollar a pound!"

(Continued on page 20)

Muskies Go Wild on the James

By OZZIE WORLEY
Roanoke

THE experts say that as a rule it takes from 75 to 150 hours fishing time for each muskie landed. Perhaps in most places it does, but not in a stretch of the James River in Botetourt County. The rule has been badly bent there.

Starting the last of February and extending into March, anglers had a veritable field day on muskies.

A father and son started the parade by catching their limits of two each in about one hour's fishing time. After their feat was publicized, other anglers streamed to the river and scored, too.

They caught muskies weighing from six pounds to nearly ten pounds, and ranging up to 33 inches long. The legal size limit is 26 inches.

At times, some parts of the river between the Springwood

Lonnie Amos (left) and Paul Amos caught limit of two muskies each to set off fishing spree.

community and the town of Buchanan took on the appearance of an opening day of the trout season. This area encompasses four to five miles of the river.

Lonnie Amos, 59, who lives near Boones Mill, and his son, Paul, 38, who is from Starkey—both communities near Roanoke—kicked off the action during a Sunday drive in late February.

While passing Rivers Bend, a fishing camp operated by a Roanoke couple between Buchanan and Springwood, they spied the owners, Mr. and Mrs. Fred Smith, tidying up their place.

It was a fine day—for February—and the Amos fellows stopped off to shoot the breeze. They'd fished for bass at the camp before. They had their tackle in the car this Sunday, and decided to cast in the river a few times.

They used Rebel lures, which resemble minnows or small fish. Some 60 minntes later they'd become perhaps the first two anglers to catch their legal limit of two muskies apiece in Virginia since these fish were introduced.

Two weighed nine pounds, another eight and the smallest seven. They ranged from 29½ to 32 inches long.

The senior Amos got the first hit. "It struck about 15 feet from the bank," son, Paul, said. When the muskie hit the

E. K. Murray shows off 7¾ pounder caught during snowstorm.

lure, his dad's line relaxed. Then, Paul said, "It came right toward my dad, took off the other way and bent his rod about double."

This was enough for Paul, who was fishing a few yards from his father. He threw his rod aside and went to his pop's aid. In about 15 minutes, Mr. Amos had the muskie close enough to the bank to land. But he'd neglected to bring his landing net from the car.

Paul thought of something better suited for the big, sharp-toothed fish. He scampered to the car and returned with a small gaff hook. He used it to yank the fish onto the bank. It was one of the nine pounders.

It was Paul's turn next. Casting his Rebel, he soon hooked a muskie and brought it in. This was the seven pounder.

John Fitzgerald holds six pound muskie. Four days later he caught one that went eight pounds plus.

Paul caught the third one next. It equaled the weight of his dad's nine pounder.

His dad wound up their limit when he landed an eight pounder a few minutes later.

All of the fish were hooked while the two men moved up and down the bank, casting only a short distance out into the river.

The area they fished is just off Virginia Rt. 43 between Buchanan and Springwood.

The following day a Roanoke man, Richard Ewers, really exploded that theory about fishing 75 to 150 hours to catch a muskie. Fishing in the same place as the two Amos men, he caught two whoppers in a half hour.

The largest weighed 8 pounds, 14½ ounces and was 32 inches long. The other went 7 pounds and measured 30 inches. Both hit bucktail jigs.

Describing the battles, Ewers said, "I nearly had a heart attack before I got them in."

It snowed the next day after Ewers got his pair. But that didn't deter his returning to the spot with his father-in-law, E. K. Murray of Roanoke, who also is a fisherman.

Due to the weather, Murray came along reluctantly. He didn't regret it, though. He reeled in a 7¾-pound muskie

Author Worley struggles through blinding snowstorm in quest of muskies.

that was 30 inches long. This one, too, hit a jig.

When the snow began to melt the following day, Ewers didn't have to beg his father-in-law to return to the river. This time Murray caught a 31½-inch muskie weighing 8 pounds, 13 ounces. Again a bucktail did the job.

The unusual catches of the two Amos men, Ewers and Murray, jolted Western Virginia anglers from their winter doldrums. Whoever heard of near 10-pound fish coming from the James, unless it was catfish or carp?

Before long the four-to-five-mile stretch of the river upstream from Buchanan was alive with anglers—fishing from the banks, from outboards, from paddle boats, from canoes.

The muskies didn't hit like trout will in a newly stocked stream, but neither did they call it quits.

There was a flurry of action a couple of miles upstream from the fishing camp—at a place where the James flows fast above an old bridge and then breaks off into a deep hole below it.

It was here that a Salem man, George Haymaker, Jr., landed one of the biggest fish of the muskie spree. It weighed 9 pounds, 9 ounces and measured 33 inches.

Haymaker's fishing companion, Charles Bays, also from Salem, got a 7¼ pounder the same trip. They trolled from a small boat, using Rebels.

Haymaker hooked his large fish first. Then Bays latched onto one but it escaped from his landing net. On their next troll up the river, Bays hooked his 7¼ pounder—and landed the fish this time.

Still another Salem resident, Jerry Aldhizer, had perhaps the most unusual experience with a muskie. It was at the same old bridge at Springwood, where Haymaker and Bays had hit paydirt.

Aldhizer made a miscast—his first throw of the day—and his Hellbender lure fell into the water against one of the concrete pillars of the bridge. Aldhizer was all set to reel in and cast again. That's when a muskie struck, only a few feet from the bank where the Salem man stood.

The fish weighed 7½ pounds. The "miscast" brought the only strike Aldhizer had all day.

Steve Kasey of Vinton also caught a bragging-size muskie. He reeled in a 9-pound, 31-inch one at the Rivers Bend fishing camp. It struck a red and white bucktail.

While he was landing the fish, it nipped his hand. Mrs. Betty Smith, a phys. ed. teacher at a Roanoke high school, had to apply first-aid.

"I don't care about my hand—just so I got that fish," Mrs. Smith quoted him as saying. He'd fished the whole day before without a strike. Mrs. Smith and her husband,

E. K. Murray's 7¾ pound muskie flops in snow.

Fred, operate the camp on weekends in the spring—and full-time in the summer—as a sort of hobby. Both like to fish, and charge only nominal fees for use of their property.

During their hitting binge, the muskies weren't choosy about their lures. You name it, and there's a good chance somebody caught a fish on it . . . jigs, Rebels, Arbogasters, River Runts, *ad infinitum*.

A barber in Roanoke, Thomas Richardson, proved they wouldn't turn down live bait, either. He brought a 6½ pounder in on a big chub minnow near Buchanan.

John Fitzgerald, fishing from a johnboat, saw a swirl in the water like a trout makes when it dashes for an insect. He instantly cast a River Runt lure in the vicinity of the disappearing circle, and soon his rod tip was dipping toward the surface of the river.

After a nip and tuck fight, Fitzgerald brought the fish to the boat. His fishing buddy plunged a landing net under a fighting muskie. It weighed six pounds. Four days later Fitzgerald returned and landed one going eight pounds-plus. "Best fight I ever had from a fish," he said.

Where did these battling fish originate?

Apparently they're the grown-ups from a stocking of about 800 in 1967, State Game Warden Pat Monaghan says. They averaged only about 10 inches when released.

(Continued on page 21)

QUAIL MANAGEMENT

By W. HASSEL TAYLOR
Game Biologist, Culpeper

"QUAIL hunting just ain't what it used to be," a bird hunting friend recently commented. "Twenty years ago it was possible to hunt all day without stopping, and finding birds was no problem. Now you have to hunt the brush to find them, if you can get permission to hunt."

There is a lot of truth to his comments, particularly in the more heavily populated areas of Virginia. Urbanization and industrialization are taking more and more land out of wildlife production. Also the farmer, due to modern farming operations, often takes additional wildlife habitat out. Clean cropping and close grazing destroy many acres of potential game habitat, and much of that which remains is posted "No Hunting."

I often hear the comment, "What has happened to the quail that lived in the fields and, when flushed, landed in the open instead of going to the woods?" It appears that, as Bill Cochran, *Virginia Wildlife*, November 1969, says, "They've just gotten smarter." To put it another way, it's a matter of evolution. Those birds that flushed out of the field and flew to the woods escaped, while the hunter continued to hunt and killed those quail landing in the open. After several generations the instinct to fly to the woods was bred in. Also with changing farming practices, clean farming reduced bobwhite cover to the brush and woodland. If the bird was to survive, he had to adapt to these changes.

With continued reductions in quail habitat, it becomes more and more important that the interested bird hunter and landowner give serious thought to managing bird hunting areas. Quail have a high reproduction potential and with average breeding conditions, a pair of quail will produce 12-14 young per year. Given optimum conditions, one pair of quail could overpopulate an area in three to four years. This seldom, if ever, happens because of nature's checks and balances, which tend to control the population of most species of wildlife at a level that a given habitat or range can maintain.

I frequently am asked, "What can I do to increase the bobwhite on my property?" The question is difficult to answer without a chance to look over the property and see what the questioner has to improve. For many years Virginia and many other states have relied on planting of food patches to improve quail habitat. Frequently food is not the answer.

First, quail management should be done by manipulating the existing land use practices to provide the necessary conditions for good quail habitat or range. What is good habitat? Most authorities agree that quail ordinarily require three vegetative cover types—crop fields, brushy cover, and grassland. For best quail range it is necessary that these cover types be well interspersed to provide some of each type for each covey. Why are there at least three cover types needed? First, crop land furnishes the food needed, grassland furnishes nesting cover, and brushy cover furnishes a "headquarters" for the covey.

USDA S.C.S. photo
Nesting cover. About one-fifth acre per nesting pair is adequate.

Depending on the crops grown, about three-quarters of an acre of crop land is needed to furnish sufficient food for a covey of 12. In the South, where bicolor produces abundantly, a one-seventh acre planting of bicolor is considered adequate. A one-fourth acre planting of Virginia's annual game bird mix plus native foods available will carry a covey through the year. Quail will not move far from protective cover, so food plantings should be made near cover. In cropland, quail will seldom move more than 100 to 150 feet into open fields. Therefore, in order for birds to utilize a

Quail have had to take to the brush and second growth woodlands to survive.
Commission photo by Kesteloo

Commission photo by Kesteloo

Protective cover and food together provide quail habitat. Birds will not move far from one to find the other.

field, they need travel lanes that furnish them protection. Hedgerows or grown-up fence rows furnish excellent travel lanes and may also furnish the needed brushy cover. Leaving a strip of unharvested grain or an unmowed ditch bank or drainage strip, pond margin, stream bank or rock pile will enable bobwhite to utilize the available food.

Much has been written about planting for quail. Virginia has for many years furnished free packages of annual game bird mix seed which is distributed through the wardens in each county. If food is needed, planting an annual mix patch or a bicolor strip may hold the covey, but often food is in ample supply, furnished by the farm crops planted or by the weed seeds growing wild. Quail feed on a wide variety of weed seeds, grain, fruit, insects, and some grasses. Native wild foods include seed and fruits from ragweeds, beggarweed, smartweed, sumac, honeysuckle, partridgepea, flowering dogwood, acorns, grape, blackberry, white ash, poison ivy and others. Bobwhite will utilize corn, soybeans, cowpeas, cereal grains, millets, buckwheat, lespedeza, milo, and other farm crops. Insects such as grasshoppers, crickets, leaf beetles, ground beetles, weevils and other invertebrates are eaten when available.

If good planting is to be done, select foods that are adapted to the region and will produce food that will be available during the critical period of winter. For permanent plantings, bicolor, lespedeza and autumn olive are good choices. Select planting sites close to cover and protect from livestock damage by fencing if necessary. Protection from livestock is important and cannot be emphasized enough. Often times just fencing a corner of a pasture field can furnish the food and cover needed to establish a covey range.

Nesting cover can be provided by leaving odd corners or strips of hay fields untouched. About one-fifth acre is adequate for a pair of quail to nest.

The brushy cover is used as a "headquarters," where the covey loafs during the day, as a congregating area, and as protection from enemies and when deciduous leaves have fallen. This cover may be only a relatively small clump of brush, a fence row allowed to grow up, or woodland with some undergrowth. A minimum size for the headquarters area appears to be about 15 by 30 feet. Woodland is considered by some as a fourth required cover type. It furnishes escape cover and some food in the form of nuts, seeds, and fruits. For this paper, woods are considered as brushy cover. "Headquarters" areas should be 100 to 150 yards apart or one to 10 to 12 acres.

Quail generally prefer a roosting site on bare ground or light litter in cover that is not too thick. Roosts are usually found in open fields with vegetation thin enough for escape flight, but furnishing some protection. This could be considered a cover type but is usually found in the grassland or brush cover types.

A controversial method of game management is prescribed or controlled burning. In abandoned fields conditions are usually ideal for quail the first couple of years, then brushy shrubs, briers and vines develop too thick for quail to fly or run on the ground. This is the type of condition where prescribed burning is best and cheapest. Burning cleans off the heavy debris, briers, heavy brush, etc., and allows desirable plants and weeds species to grow and furnish food for game. Periodic burning of abandoned farm land keeps the plant succession at the stage desirable for good quail range. Research in Illinois by Ellis, Edwards, and Thomas (1969) found that by use of prescribed burning alone, quail increases were greater than on areas managed by use of food patch plantings.

Burning should be done during February or March for best results. At this time wildlife is least likely to be harmed. Also, desirable trees or plants are not likely to be damaged.

(Continued on page 19)

The Wanderers

By KATHERINE W. MOSELEY
Rixeyville

IN the world of wildlife there are wanderers and there are stay-at-homes. Some creatures know their niche in the scheme of nature and remain in or around one locality throughout their lives. Food is not the only factor that limits an animal to a particular community but there must be a congenial climate, escape cover for refuge and a sense of harmony with the surroundings.

The spur that prompts other primal adventurers may be food shortages, overpopulation, and environmental changes to which they cannot adjust. These begin to explore for food, have new experiences, and learn to accept the challenge of a changing world.

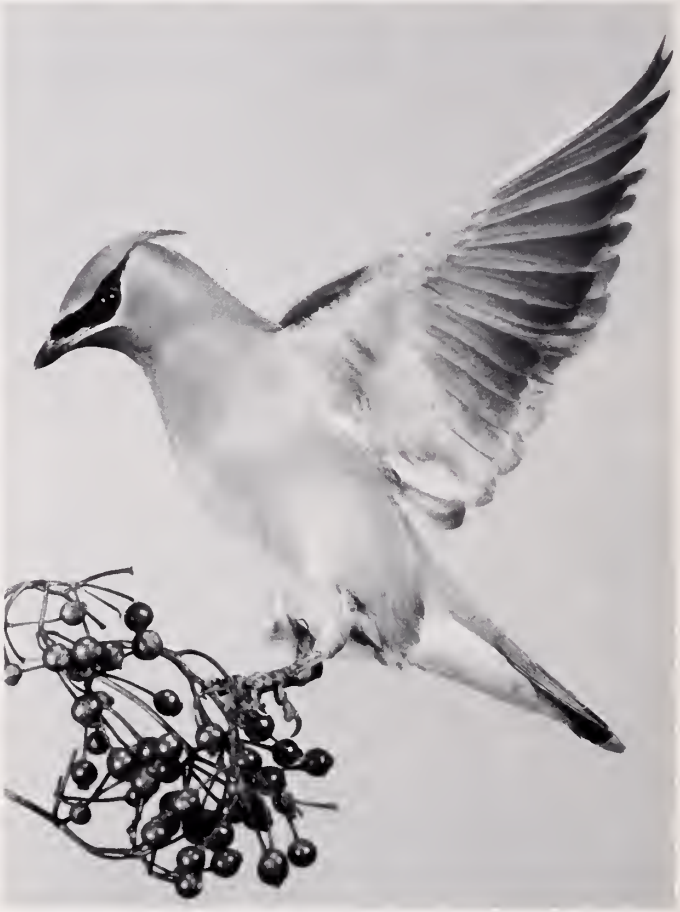
Sometimes they wander in groups which fosters a social interaction to their benefit: food is found more easily by many: defense and protection have advantages with others on the alert. There are also the solitary ones who choose to travel alone. Except at mating time and brief mother-young interval they remain "loners."

Changes in distribution are now taking place rapidly as forests are cleared, streams transformed, wooded hillsides turned into orchards and spruce and pine forests into oak and beech woods. Sectional climates are not dependable with as cold winters striking in Mississippi as in Delaware, snow falling in Georgia. Many man-made wildlife refuges and bird sanctuaries have been established for the wanderers who are not migrants but are more on the order of nomads.

The coarsely-haired opossum of the family DIDELPHIIDAE is well known in most parts of America, thanks to its wandering ancestors who spanned three continents. The species that is familiar today is believed to be a reinvader from South America. It can trace its history farther back than any other living mammal. The common, or Virginia, opossum is of the order of marsupials. The striking characteristic of the marsupial is the possession of a pouch on the outside body of the female in which the young are nurtured almost from birth, which occurs a few days after conception, until the young are strong enough to exist alone.

Traditionally the opossum was an inhabitant of southern forests but has now extended its range from the Gulf states to the Atlantic coast and north to New England. From the Gulf states it wandered west to Colorado and along the Pacific coast. Their needs are few: security from bad weather, food which means anything edible, and a brief time for mating. They are not social, communicative animals but tolerant of each other. They have adapted to man's life and communities with alacrity. The opossum's remarkable vitality and tenacity to life is perhaps a secondary explanation for its survival; undoubtedly the primary reason is its inheritance of habits which include an easy acceptance of life as it finds it. If confronted with danger it faints from shock, if hungry and cold it hunts where people dwell where may also be warmth and food.

It is hard to imagine a more unlikely explorer than the armadillo, a relative of the giant prehistoric ancestor, the GLYPTODON. In order to survive the armadillo had to become smaller, which has taken thousands of years, but it retained the armor-plated shell of its kind. When the earth's crust heaved upward a few million years ago to make a land connection between North and South America the armadillo trudged over the new land bridge. The human mind reels at the idea of the small clumsy creature making such an exodus to finally settle in the hot, sandy plains of Texas. From Texas the animals began to scatter and have spread north to Oklahoma and Arkansas and east across the Gulf states to Florida. It is likely the adventurers have reached the limits of their range as they are dependent on food not available in extremely cold climates. They must have living insects, preferably ants and grubs and worms as year-around food. Although they are earth burrowers, they do not hibernate.



Karl H. Maslowski photo

Cedar waxwing.

Armadillos are of a social group and are often seen in bands; usually there are mothers with their four identical young.

The porcupine is the wandering recluse of the northern forests. It wants no associates, has no associates, and is totally lacking in qualities that could make it a part of a group-unit. It prowls alder thickets and ambles about in various conifer forests.

The porcupine was once numerous throughout the northern forests and occupied nearly all of the continent south to West Virginia, southern Illinois, and parts of the Sierra Nevada. Without losing numbers it has retreated generally to the coniferous forests of Alaska and Canada, with some extensions southward in the northeastern and northwestern United States. They are creatures that refuse to give up their way of life. Perhaps they cannot. They are sluggish of minds and bodies, with poor eyesight and unattractive appearances. The diet is strictly vegetable matter, bark, twigs, leaves with salt added wherever it may be found. Every porcupine is very fond of resin-filled bark and may sit in a crotch of an evergreen for several days gnawing happily.

Indians prized porcupines for their quills which they colored with vegetable dyes and used to decorate moccasins, belts and buckskin clothing. These animals may not be bright-minded or fleet-footed but their ancestors of thousands of years ago set a pattern that has not been broken. It is likely that in another thousand years other porcupines who have retreated to other coniferous forests will be chewing resin bark. *If* there are any conifers left by then.

Hoofed animals do not have settled homes but enjoy large ranges in which to wander. The elk and caribou of North America covered as many as five hundred miles in their journeys when they were plentiful. The western North American bighorn sheep and mule deer are always on the move to where food is more accessible. The Virginia or white-tailed deer is well known in all of the forest areas of eastern North America. Partly through protective laws and partly through acute intelligence and adaptability the Virginia deer is able to hold its own in suitable woodland areas and has pushed many miles northward into New England, Ontario and Quebec. In summer the whitetails are usually solitary or wander the forest in parties of two or three. In winter where the snowfall is heavy they band together so as to keep beaten paths through the snow to browse among trees and shrubs.

The mockingbird that sings with unbelievable purity from a chinaberry tree in Mississippi may have a brother equally gifted in a magnolia tree in North Carolina and another brother serenading from a stone chimney in Maine. A relative, the western mockingbird, is a marvelous songster although it is a paler, larger and tawnier version of its eastern kin.

Almost universally considered a southern bird, the mocker has increased its range northward and westward. The great mountain systems, the Rockies and the Alleghenies, extend mainly north and south, thus presenting no barriers to restless wings. The long-tailed gray bird with wide, white patches on the wings not only accepts but likes human neighbors. It has conformed its life to roadsides, farms, gardens, orchards and towns. There is no lovelier sound in nature than the song of the mockingbird. There is no greater tease than a mockingbird skilled in mimicry.

The beautiful cardinals are other birds of the south that are becoming more common in the northern states and remaining there. The bird is an aristocrat, a shining example of innate superiority, that demands respect and admiration. Cardinals do not migrate but live on the seeds and buds of trees and bushes in winter and upon insects and seeds in summer. People feel fortunate when cardinals live close by. A pair of dazzling-red cardinals in a snow-feathered hemlock or pine is an unforgettable picture, as entrancing as a pair in a dogwood tree in bloom.

As some southern birds have shifted their home range to the north, so have some northwestern birds become permanent northeastern birds and persistent winter-through-spring migrant residents in the mid-Atlantic states. The evening grosbeaks, audacious and gorgeous, once lived in the conifers of the bleak foothills of the Canadian Rockies. They began to wander southeastward probably because of food shortages in a severe winter.

They wintered for a period in Michigan and Illinois. Their presence in New England was almost unknown until the winter of 1889-90.

The first record of the evening grosbeak in New York was during the 1911 migration. As late as 1916 ornithologists took great interest in the birds from so far away. About six years ago the *Richmond Times Dispatch* carried an item that the evening grosbeaks were sighted in the Shenandoah Valley. Since then each winter has brought more and more of the birds southward to Maryland, the District of Columbia, and to Virginia. They arrive in the piedmont area of Virginia, at our place and in nearby Culpeper on the day before Thanksgiving and they stay about five months. On their strong, wild wings they have found other conifer forests, alder thickets, apple orchards and backyard feeders. The February 1970 issue of WILDLIFE IN NORTH CAROLINA gave the strangers an official welcome. It is interesting to speculate if their wanderings in certain directions is due to happenstance or some native sense that pilots them to hospitality. There is seldom one grosbeak as they are highly social and always travel in flocks. Like prospectors after gold they may keep going so that South Carolina may welcome the handsome, hungry, restless guests.

Cedar waxwings are also northern birds that are roving residents with no fixed season for migration. The birds are exquisitely dressed in silky, dove-like plumage. The tail has a narrow yellow band across the end and on the wings are the small red spots like sealing-wax that are responsible for the name. The pointed crest and velvety black chin, forehead and line running across the eyes give distinction to the head.

Waxwings also travel in groups, large and small, to feed on cedar or juniper berries, chokeberries, dogwood, woodbine berries, elder and other small wild fruits. They move on after stripping what is available to search for other berry-bearing trees and shrubs. When rising to take wing, the squad still stays together flying evenly and swiftly on a level with the treetops but wheeling suddenly to dive downward into a promising berry-laden thicket. They care little for cultivated fruits and seldom touch them. If the birds are seen in an apple orchard, they are after the grubs and caterpillars and the orchard will be in better shape next year.

There is an old saying that fools flit and wise men sit, but if success in the world of nature is measured by the survival and dispersal of the species, the wanderers of the animal kingdom seem to prove the adage wrong. Wildlife on the go seems more involved with the earth, its seasons, its hardships, its gifts, and its mysteries.

WILDLIFE CAN TAKE IT

(A Report On Winter Feeding)

By J. E. THORNTON
Supervising Game Biologist

ACCORDING to all the weather prophets who have been heard from so far, this winter will be a loo-loo. In other words, predictions are that temperatures will drop well below normal, and we will have snows "belly-deep" to a 12-point buck.

Whether we do or not is anybody's guess. Regardless, come the first snowfall over three inches, the Game Commission Office in Richmond and the game wardens and biologists in the area of the snowfall will be deluged with questions about putting out food for wildlife to keep them from starving to death.

Why is this? Well, most people would like to "do something" to help out even if it is of dubious value. There seems to be an instinctive human urge to provide wildlife with food to tide them over during periods of extremely cold weather or heavy snows when much of their natural foods become unavailable.

Winter feeding of wildlife is, of course, not all bad and does offer some advantages. Wildlife authorities generally concede that when food is properly distributed, it sometimes does carry through the winter small numbers of animals or birds that otherwise might not have made it.

It may, under some circumstances, hold game in a given locality for the specific purpose of providing protection. Perhaps the most important advantage of winter or "emergency" feeding is the active cooperation in other conservation programs that it generates through public interest in the emergency programs.

There are, however, some serious disadvantages connected with emergency feeding of wildlife, and these usually outweigh the advantages. The chances are it will not prevent the loss of wildlife in areas subjected to heavy winter weather in spite of the best that man can do to feed the wildlife during such periods. At best, the distribution of the food is marked by inefficiency. It is almost impossible to distribute the food in such a way as to benefit anything but a very small percentage of the population, simply because of their inaccessability and remoteness. Large amounts of the distributed food is often utilized by animals for which it was not intended. In addition, there is grave danger of attracting predators to the feeding site, and of spreading disease as a result of the concentrations of game populations. The artificial foods introduced may cause severe or fatal digestive disorder. This is particularly true of deer. Such feeding also has a tendency to reduce the wildness in some species and creates a dependency upon man which works for the detriment of the species concerned.

That wildlife losses do occur in winter during heavy snows and cold weather is well-known. Fact is, some loss of wildlife during the winter months seems beneficial from a management point of view, since it culls out the weak, diseased, and the unfit, thus, making for a stronger, healthier population. Most people, however, tend to underestimate the ability of wildlife to weather the winter storms. They are a product of their environment and had they not been able to survive under such conditions, the species would have long ago faded away. Wild turkeys, for example, have been known to scratch through fifteen inches of snow in order to reach the ground in their search for food. In very severe weather, turkeys will be found following deer to take advantage of their pawing for forage, and wild turkeys have been known to stay on their roost for from 4 to 14 days after a deep snow before flying down to the ground. Controlled weather experiments have indicated that pen-raised wild turkeys can survive fifteen days or more without food or water and, having survived the winter on short rations, there was little or no difference in their capacity to reproduce.

The bobwhite quail is probably more vulnerable to winter starvation than most other game species, but the number of individuals lost due to this cause is small when compared to overall population. The ruffed grouse is practically immune to usual hardships of winter because of its habit of bud-eating. Rabbits sometime suffer for lack of food during heavy snows but this is often compensated for by elevating them to a new browse supply previously out of reach. In Virginia, winter starvation of white-tailed deer is rare indeed, as snow seldom gets so deep or stays on the ground long enough to be a serious factor. Deer starvation does occur in the more northern states in the winter months, however. Because of range deterioration usually caused by an overpopulation of deer, deep snows in these areas limit the availability of such food that is present, thus making a bad situation worse.

In general, the Virginia Game Commission recognizes that winter is a period of increased stress to nearly all species because of emergencies associated with heavy snows, low temperatures, and wind, but feels that winter feeding can seldom be justified because of the ability of wild birds and animals to survive normal periods of stress. Hence, the policy of the Commission on winter feeding stresses that a winter feeding program will be carried out only when a "definite emergency" exists. An "emergency," for this purpose, is defined as a time when a minimum of six inches of snow remains on the ground for a period in excess of fifteen days, and then it will be designed to benefit bobwhite quail and wild turkey only. No attempt will be made to feed other game, such as deer or grouse. Such feed will be limited to corn, wheat, or barley. The county game warden is charged with determining when an emergency exists and the responsibility of planning and supervising the feeding program if and when it becomes necessary.

In the long run, it is much more satisfactory to provide winter food through plantings of food patches in the natural habitat. "Plant in the spring where you hunt in the fall" not only provides better hunting in the fall, but assures an abundant supply of food through the winter months. If feeding becomes absolutely necessary, the local landowner and farmer are in a position to do more than any organization or individual since they are close to the habitat and know where the wildlife are and what their needs might be. Attempts to feed wildlife during periods of heavy snowfall is a costly, time-consuming proposition. From what scientific evidence we have, it seems to do little to benefit the wildlife it is intended to help and probably causes more harm than good.

VIRGINIA WILDLIFE ☆ ☆ ☆ ☆

CONSERVATIONGRAM

Commission Activities and Late Wildlife News . . . At A Glance

HISTORIC PHEASANT SEASON BRINGS SURPRISES. Incomplete results of the first pheasant season since the foreign game bird program was introduced in the state of Virginia indicates at least 194 rooster, or cock, birds were taken during the historic two-day season November 16-17, 1970. Counties reporting birds tabulated through the mandatory checking stations ranged from 3 in Wise County, which borders on Kentucky in the far southwest, to a surprising 50 in Loudoun County, bordering Maryland at the northeast edge of the state.

Other counties reporting large numbers of harvested birds included Page County with 47, Shenandoah 23, Rockingham 17, and Charles City with 13. Three of the 17 counties which reported successes had only one bird to report. These were Roanoke, Culpeper and New Kent.

"Hunter cooperation in checking the birds through the various checking stations will play a significant role in determining the success of the stocking program," states R. H. Cross, chief of the Commission's Game Division.

5,983 ACRES OPENED TO HUNTING IN DICKINSON AND WISE COUNTIES. U. S. Corps of Engineers lands totaling 5,983 acres in Dickenson and Wise Counties have been turned over to the Commission of Game and Inland Fisheries for management under a 25 year cooperative agreement, reports Commission District Game Biologist Charles H. Peery. The areas are located adjacent to Pound and Flannagan Reservoirs and will be primarily of interest to hunters although fisherman foot trails around the lake shores are in the development plans. Boundary signs designating the areas as Cooperative Wildlife Management Areas are being erected.

Efforts are already underway to increase game populations. Between 1967 and 1969, 37 wild turkeys were released in the North Fork Area, and 47 deer were released in this section in 1967. Habitat improvement plans are being formulated for both areas. Game Refuge Supervisor Verlon W. Smith of Coeburn is in charge of the game management work. The North Fork of Pound Area, with its 2,722 acres along the shores of the North Fork Reservoir, lies within the portion of Wise County currently closed to deer hunting because of recent stocking efforts. The 3,261 acre Flannagan Reservoir tract lies in the portion of Dickenson in which deer hunting is permitted. Both are closed to spring and fall turkey hunting at the present time. They were opened to types of hunting permitted in their respective counties this past fall.

BIG EASTERN DEER WINS TROPHY CONTEST. An 18 point buck bagged in Fluvanna County won top honors for W. J. Bryant of Grafton at the Game Commission's State Big Game Trophy Contest in Harrisonburg, October 24, reports Contest Supervisor Max Carpenter, District Game Biologist. The big rack scored 247-11/16 according to the official scoring system used, which is similar to that used by Boone and Crockett. It is the largest eastern deer since Peter Crocker's giant from Isle of Wight County set a new contest record of 267-7/16 in 1963. A 15 pointer killed in Augusta, which scored 231-1/8, won second place for John Cozort from Lockbridge, West Virginia.

Class II, which is limited to 7 and 8 pointers, was won by L. R. Spraker of Salem with an 8 pointer from Botetourt County which scored 174-2/8. The six point class top award went to J. C. Nuckolls of Stuarts Draft, who entered an Albemarle 6 pointer scoring 140-5/16. Top place in the archery class was taken by a 9 pointer bagged in Amherst County by C. R. Williams of Madison Heights. Williams' bow trophy scored 170-1/8.

A 581 pound black bear bagged by Russell Lam of Elkton in Page County easily won the bear competition with a skull score of 30-6/8, setting a new state record. The previous record bear was a 515 pounder from Albemarle County which scored 30-1/2 points in the 1965 contest. A Dismal Swamp bruin, which scored a respectable 27 points, won second place for Ronald Sybers of Virginia Beach.

Going steady.

A change of plan.

Traffic jam.

Fumble! Who

READIN

Exercise of t

Text and Photos by BILL
Bla

TREES speak in the winter, not lo
Their stark branches, their jag
our imagination. To those who w
limbs, their crooked trunks tell us thi

Trees are as diverse in their meani
their physiques. Etched in relief agai
into articulate statues.

To read a tree one must first look
mind's eye unveil the meaning of its
things from different angles or may
angle. Undoubtedly, the same tree f
different things to different beholders

Numerous are the messages a singl
fellow creature. Others display a hu
worded statement.

The tree speaks when the chill of
when many of us have forsaken arbo
and its orgy of color, not long before
fickleness, we turn to other things.

But some of us remain to watch t
strips off the last vestiges of its foliage
before us is a new personality.

Conifers now emerge more appar
autumnal brilliance of deciduous folia

Dead trees also may now tell tales
been muffled by the lush verdure of t

John L. Sullivan, or "Put up your dukes!"

The last straw.

Violinist.

The acquisi

t the ball?

TREES

Mind's Eye

BILL WEEKES

rg

fter they have dropped their mantles. wigs scratch messages in the sky to e, their tangled arms, their ensnarled

s they are in the angles and twists of e clouds, trees configurate their parts

with care for detail and then let the le. The same tree may say different e different messages from the same the same vantage point will express

e may dictate. Some remind us of a attitude or pose. Still others lend a

er's barrenness arrives. It is a time nterests. Our admiration for the tree now been spent. With typical human

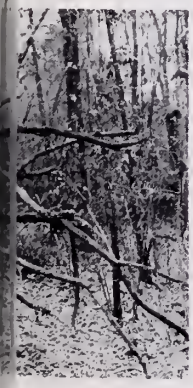
ansformation of the tree. As winter tree's nakedness is exposed. Unveiled

Shoved into the background by the e evergreen shares a winter spotlight. ofore untold because their voices had ing.

"I'm beginning to see things your way."

Harp without strings.

Hi-ho, Silver.



stinct.

Swordsman on horseback.

"Who shot that arrow?"

Chicken scratchings.

"I simply must do something about my hair."

WAIDMANNSHEIL: HUNTING IN GERMANY

By ROBERT J. CLEMENTS
Graduate Fellow
Virginia Cooperative Wildlife Research Unit
V.P.I., Blacksburg

HUNTING has been practiced as a sport for the past eight centuries in Germany. Although men no longer lose ears, limbs or even their lives for killing the king's game, as in times long past, many of the old customs, evolved through centuries of hunting, are almost as important as modern written German hunting law. These customs have been instilled in the German hunter and are passed from father to son over the years. A breach of German hunting custom is almost as serious as a violation of hunting law. Many customs are similar in nature to the courtesies Americans extend to fellow hunters.

One of the first customs noticed is the use of "Waidmannsheil" and "Waidmannsdank." When two hunters meet or separate or a hunter joins a group on a drive hunt, "Waidmannsheil" is exchanged as a greeting. When a hunter accepts congratulations for a successful shot or when his guide places him on his high seat, he replies to "Waidmannsheil" with "Waidmannsdank." Thus, "Waidmannsdank" is appropriate in any situation in which Americans would say "Thanks." When a hunter makes a successful shot, each of the other hunters congratulate him and shake his hand.

It is customary for the German hunter to show respect for the trophy animal he has killed on a still hunt. This is done by the Totenwache or death watch, at which time the hunter sits on the ground near the animal for a brief period before dressing it.

Following a drive hunt, game are laid on their right side in rows according to rank with the best specimens of each class first. The ranking is as follows: red deer, fallow deer, wild boar, roe deer, fox, hare, rabbits, pheasants, and other birds. When the game has been arranged and is on display, the hunters take their designated places and a last bugle salute is sounded in honor of the game. At all times, the hunter must go around the game and not step over it. This is an additional sign of respect for the fallen animal.

Another important custom is the use of tree branches to facilitate and add interest to the hunt. Branch signs are only made from oak, pine, spruce, silver fur, or alder trees. The Main Branch Sign is used to draw the attention of other hunters and indicates that something has happened. A large arm length branch with the bark peeled off is placed on the ground or hung from a tree or a fence. The Shot Branch is a large branch thrust into the ground at the spot where the animal stood when shot. The Ownership Branch is placed on an animal to indicate a legal kill after the animal has been laid on its right side. The broken end of the branch toward the head indicates a male and the reverse indicates a female. It is customary for the hunter to give all cloven-hoofed game, the capercaillie (Auerhahn) and the black grouse (Birkhahn), a last bite on this earth. A branch placed crosswise in their mouth signifies this. Following a successful kill of the above animals plus the fox, a small branch is dipped in the blood of the animal and placed on the hat or hunting knife of the guide or person in charge of the hunt. The guide then presents the branch to the successful hunter with the word "Waidmannsheil." The hunter of course answers "Waidmannsdank" and places the branch in the right side of his hatband.

Much of the small game in Germany is taken during formal drive hunts in which hunters are stationed a safe distance from each other and beaters drive the game toward them. Another method is to have the hunters make a large circle and drive the game toward the center. On organized hunts of this nature, bugles and horns are used to indicate the progress of the hunt and to ensure the safety of the hunters. Horn signals tell the hunter when to start the hunt, when the beaters are in the area, and when to move to new stations. The organizer of the hunt first instructs the hunters what game may be taken, what safety rules are to be observed and what the bugle calls indicate. Thus, the custom of horn blowing also serves a purpose.

A hochsitz, or elevated deer stand, on Mt. Schneeberg, near Hof, Germany.

Hunters have developed a special language, and many words in their vocabulary do not have the same meaning or are not present at all in the regular German language.

The German hunter wears the traditional forest green color, but brown or grey is also acceptable. This sounds like suicide to the American hunter, but it must be remembered that most small game hunts are highly organized, and big game hunting must be done with a guide who knows the area and positions the hunters a safe distance from each

other. Most big game hunting is done from a Hochsitz or high seat, which is a platform 10 to 25 feet above the ground, built near game crossings, paths, open areas or feeding grounds. Thus, the hunter runs little risk of being shot even though his clothing blends in with the surroundings. In most cases when a hunter is in a strange area or if he is inexperienced, a guide will stay with him on the Hochsitz and point out which animal may be killed. The Hochsitz facilitates selective shooting, minimizes the possibility of the animal detecting the hunter's scent, and also aids in the taking of the game census.

After a hunt has been completed, the hunters retire to a hunting lodge or local Gasthaus for a round of good food, beer and boasting about the events of the hunt. Anyone who has accidentally committed a breach of custom during the day is expected to buy the entire hunting party a round of beer to warm their vitals and make amends.

Now that we have some understanding of German hunting customs, let's examine some of the general conservation practices which influence these customs. There are some fundamental differences which make our two styles of hunting radically dissimilar.

First and foremost is that the landowner owns the game and is responsible for it. By responsible for it, is meant that he is responsible for its well-being and also any damage it may do to the crops and property of others in surrounding areas. If it can be proven that wild boar are coming from a particular landowner's property and destroying the potato crop of a nearby farmer, that landowner or lease holder is responsible for the loss.

Big game and small game are harvested just as any other crop of the land, and the owner of the land usually sells the meat to retail stores, restaurants, or individuals. This seems totally contrary to all conservation programs we know of in the U.S. Here we want to supply a constant large number of animals for a maximum number of hunters. In Germany, with almost all available land intensively used, it is a problem of maintaining the maximum amount of game that intensive agricultural and forestry practices can accommodate. Most landowners thus have a keen interest in maximizing the returns in the form of wildlife which they can harvest, as the sale of these animals is part of his payment for good conservation practices.

Bavarian hunting attire includes lederhosen (leather breeches), knee socks, sport shoes, and leather hat with boar bristle trophy in hatband.

Hunting, then, is for the pure sport of being in the field with good dogs, savoring the out of doors, the stalk of an elusive quarry, the excitement before the squeeze of the trigger, and finally the reward in the form of a clean kill from a well placed shot. The comradeship of fellow hunters and the sport alone are the rewards. The hunter may buy the meat from the landowner if he is willing to sell it, but this is secondary to the sport itself. Each animal normally has a trophy part which the hunter is allowed to keep, such as the tusks and neck bristles of the wild boar, the horns of the roe deer, and the tail feathers of the pheasant. The landowner has a wildlife crop which has been intensively managed for maximum production. He allows hunters to hunt for the sport of it and in return gets his crop harvested. Both the landowner and the hunter, then, have a vested interest in seeing that the wildlife crop is properly managed. The hunter also comes by invitation only to a hunt and if proper rules and consideration of the landowner's property are not observed, he will not be invited again.

In order to provide this type of intensive game management program for big game, the normal annual increase must be cropped. A prerequisite for this is the shooting plan

Intensive forest management practices require fencing of new pine seedlings (lower right) to reduce damage by roe deer and rabbits. Monument was erected to bring blessings of fruitfulness to the land.

(Abschussplan) established for the Auerhahn, Birkhahn and for all hoofed game except the wild boar. The total increase of the year normally must be taken to keep crop damage and forest damage to a minimum and to ensure that the breeding herd will be down to that number which the winter environment will support.

The shooting plan is based on an annual game census, size and carrying capacity of the area, biological and reproduction factors, law and regulations and is subject to approval at the county level. The number, sex and quality of animals to be shot is established by the plan, and the landowner or lease holder is required to fulfill the plan. Seasons are therefore usually flexible in that the season may have to be lengthened or shortened to get the proper kill on each individual area. This type of selective hunting normally is beneficial to herd quality in that the sick, weak, underdeveloped and undesirable animals are shot first as a matter of practice. The best specimens are kept for breeding stock. As an example, roe deer are graded and the shooting plan indicates the numbers

Waidmannsheil: (Continued from page 17)

in each grade and how many of the high quality animals can be killed after most of the low class animals are removed. Along with this idea of selective shooting, has developed the prizing of the most misshapen and deformed horns of the roe deer as the trophies of highest value and the sign of the true sportsman. In the roe deer, many horn deformities can be traced to a physiological imbalance within the animal. Most hunters have some excellent specimens also, but the more unique their collection of oddities, the higher the esteem in which they are held.

In order to increase the winter carrying capacity of the land, and thus the annual crop of wildlife, many landowners engage in a program of winter feeding to reduce crop and forest damage and carry more animals through the winter. Wildlife food plantings are planted, but a great deal of food is dispatched at feeding stations set up and regularly maintained in the area. Hay, chestnuts, pressed meal cakes and other foods are commonly fed. Feeding programs are practical because the land units are managed on an intensive basis in relatively small blocks, whereas our hunting areas are normally very extensive in size.

The illegal hunting or trapping of another man's game is a serious offense in Germany, and severe punishment in the form of fines and imprisonment is usually levied. An armed poacher may be shot by the landowner if attempting to run when ordered to halt. Under this system, poaching is rare. Predator damage by dogs and cats is tightly controlled. Owners of dogs found roaming in wildlife areas are subject to heavy fines. Dogs found loose in hunting areas may, in certain cases, be shot on sight. Cats cause great losses to young game birds and rabbits and are severely dealt with. Cats found 200 to 300 meters from the nearest habitation are shot, or dispatched by a hunting dog.

In order to become a licensed hunter in Germany, each applicant must take a Huntsman's Examination. To successfully pass it, one is required to take a course in German hunting customs, regulations, practices, safety rules, and learn the biology of each game species. After achieving the certificate, the license fee is 50DM or approximately $12.50. In addition, each licensee must obtain an insurance policy totaling $62,500.00 personal liability, and $6,250.00 property damage. The hunter has about $25.00 invested to license him to hunt each year, plus the time and effort of passing the Huntsman's Examination.

As the population increases and the environment suitable for wildlife shrinks, our system and style of hunting may evolve in this general direction of the Old World. Their practices are steeped with custom and many years of intensive management and learning to maximize the wildlife resource on a minimum of land with high density human populations. There are very deep and basic differences in our wildlife resource management systems, but theirs seems to work under their conditions, and wildlife still abounds in Germany.

Farming is intensive, but by traditional methods that provide small fields, woodlots and hedges and create a diversity of food supplies, cover types, and edge.

Quail Management (Continued from page 9)

Areas to be burned should be first surrounded by a firebreak sufficient to control the fire and burning should be done during little or no wind conditions. Use good judgement in use of fire and consult local law and fire protection agencies before burning. Areas burned should be no larger than 5 to 10 acres and have adjacent areas of cover left for game to escape into. An area should not be burned oftener than every three to four years. Prescribed burning is used, with good results, on some State managed wildlife areas and some military areas in Virginia. The Quantico Marine Corps Base has a prescribed burning program which has produced very good quail range at low cost.

Now take a look at your property. Do you have all three cover types interspersed? Chances are that you may have all three but not dispersed in such a manner as to furnish good quail habitat. Perhaps if you leave a corner of a crop field in grass and don't clean all the honeysuckle out of the fence row along the corn field, you will establish a new covey range. Or perhaps a couple strands of barb wire are needed to keep the cows out of a food patch. Chances are good, if you provide the habitat, a covey will become established.

If there are quail within one half mile and you provide conditions that are favorable, birds will generally move in and establish a new covey. Kabot and Thompson (1960) found that one or more miles of coverless land interrupted the continuity required to maintain a quail population throughout a given area. In Virginia this situation seldom happens.

Quail appear to have a saturation limit of about one bobwhite per acre. This population may vary with the quality of the habitat and may reach higher numbers during ideal conditions for short periods of time. Although good bobwhite range may carry one bird per acre or more, there are many areas that cannot and never will be able to support a population of one bird to 20 to 30 acres. Some of these are due to soil fertility being such that even native food species cannot grow; others are due to the type of land use practiced. Clean farming with large fields and close grazing of pastures limit quail production. In some instances use of pesticides has limited and will continue to limit quail production. One bird per acre can be used as a guide to evaluate your quail range. If you have one bird per acre, "good hunting."

Should the Sportsman be a Joiner?

By GEORGE M. DODSON
Harrisburg, Pennsylvania

AMERICA has long been known as a land of "joiners," where the hobby of some people must be trying to increase the number of groups to which they belong. Nor is there any shortage of opportunities to get on membership rolls. As Tom Mahoney points out in the title of his long and fascinating article in *The American Legion Magazine*, "There's an Organization for Almost Anything."

To what extent should the sportsman/conservationist become a joiner? In these affluent times, the answer no longer depends on the amount of dues he can afford to pay. Fewer family budgets would now be put seriously out of kilter by the small cost of the memberships in most groups with a worthwhile cause as their reason for existing.

Finding time for active participation turns out to be an entirely different matter. Unless the sportsman believes so strongly in the goals of his organization that he wants to help with the work, the few dollars he pays as dues may serve mainly to ease his conscience. Certainly in those instances where cash contributions for the year equal only an hour or so of his earning power, additional effort is required before the sportsman or mildly interested conservationist has a right to feel he has done very much toward support of the cause.

True enough, some national organizations succeed by soliciting rather inexpensive membership, but their wide coverage permits them to hire experts and authorities in the field to act on the members' behalf. And, quite naturally, they expect the men and women who join will also use their personal influence to bolster public insistence on wise conservation laws.

Unfortunately, more localized groups usually lack any considerable financial support. Their worth depends to great extent on what they can accomplish by their long-continued hard work. When they convince a landowner to practice modern conservation procedures, when they win cooperation from local officials in improving matters, when they encourage a bright student to consider some phase of conservation as a career, when they set an example for the community in preservation of natural beauty and resources—in such ways does the small group justify its existence.

Listed under the word "organization" in a standard book of reference, we find one definition describing it as "Body of persons organized for some end *or* work." But the sportsmen who band together soon discover that one part means little without the other, and that they must have "some end *and* work" if the results are expected to be effective, lasting, worthwhile.

Conservation, in spite of its high intentions, does not exclude the idea of fun. Indeed, the conservationist who overlooks one of his chief purposes—that future generations should be free to enjoy what was taken for granted before—should not wonder that the public image of the movement sometimes appears unnecessarily somber. There is no reason why sportsmen should not receive pleasure from what they are doing to protect the future. While a balance between work and enjoyment is not easily attained, it does pay off by attracting many whose devotion to conservation, although sincere and earnest, does not quite reach the 100% level.

If Americans are habitual joiners, they are just about as eager to start new organizations. Weakness usually follows divided support. If all the enthusiasm available for such fresh ventures were to be channeled into presently established groups, a lot more could be accomplished without anyone actually having to work much harder. The first paragraph of Mr. Mahoney's article, mentioned above, was not directed to sportsmen in particular, but it might well have been: "If you're thinking of forming some sort of a club for a very special purpose—wait! Maybe it already exists."

With so much still to be done, the sportsman/conservationist has scant choice except to be a joiner—just so he's a worker too.

Bear Tolley (Continued from page 5)

The shocked and disappointed city hunters quickly left the scene, leaving Bear Tolley alone with his expensive meat. They couldn't realize that this was a matter of business with the old hunter, for he had to feed his pack of hounds all year, and selling bear meat was his chief means of making a living. In those days professional guides were unheard of. He knew if they killed the bear, he couldn't sell them the meat!

One of Tolley's daughter was said to be an attractive girl, whose suitor visited her occasionally. One evening when he arrived at the one room cabin he found the floor so littered with sleeping dogs that, to obtain walking space, he kicked one of them to move him. Tolley quickly got up, led him to the door, and is said to have told him, "Any man who kicks one of my dogs is not fit company for my daughter." The young man took the gentle hint, and the trail down the mountain. That probably ended a beautiful romance!

Another party of city hunters had heard of Tolley's fame as a bear hunter, and one of the group persuaded him to join them in their camp. After waiting for some time at the appointed place for Tolley, the man left and joined his friends, who had gone ahead and set up camp. Supper time came and went—still no Bear Tolley. Long after supper they heard a yell in the distance, "Halloo," repeated several times.

The man who was to meet Tolley took a lantern and went in the direction of the call. About half a mile from camp, he found an old man with twelve dogs, each attached by a short rope to their master's belt. In the dark, Tolley had lost the trail, and fallen down a steep bank, and ropes and dogs became hopelessly tangled around trees and brush. With the help of the lantern, the old hunter was extricated from his sad predicament, and they went to camp. After Tolley enjoyed a well earned supper, they sat around the stove and listened to his exciting tales of bear hunts. Becoming sleepy, he stretched out on a log brought in to sit on, and soon was fast asleep. He had walked, and hunted, from his home that day, a distance of more than twenty miles!

About 4:00 a.m., Tolley quietly left the camp before his hosts awoke. They found that he had gone, and soon they heard his hounds giving tongue in the distance; they had already struck a bear trail! These city hunters never saw the old man again, but heard his hounds occasionally for several days.

A tragedy saddened the later years of this remarkable man's life. His young grandson, fifteen years old, whom he idolized, was accidentally killed while rabbit hunting. The old man's grief cast a shadow over his remaining days on earth.

No doubt he had taught the youth many things about bears and other wildlife, including these facts. Female bears have cubs no more frequently than every two years, usually during late January, and the cubs stay with the mother for two years and often longer. At birth, bear cubs are no larger than rats. When they are large enough, mother teaches them many things to prepare them for their rugged life later, when they must fend for and protect themselves.

Contrary to general belief, in Virginia black bears do not always go into hibernation during winter months. Veteran hunters know that so long as bears can find sufficient food to maintain themselves without losing fat, they stay out. When deep snow or other cause drastically reduces the food supply, they go into dens and the stored body fat keeps them alive. The females bear their young in caves or rocky dens after a gestation period of 210 days.

Tolley used to come to Buchanan every Saturday to bring bear meat or produce, and to buy staple groceries. On one of these trips when he was quite old, he was astonished to find all the stores closed. When he asked someone about this, he was told that they always closed on Sundays. Then Tolley asked, "How come it to be Sunday in Buchanan when it is Saturday on Purgatory Mountain?" The old man probably hunted bears one day longer that week than he thought he had.

Many admirers of Bear Tolley have suggested that an appropriate monument or historic marker, as a memorial to him, be made from local stone, and erected at a parking overlook on the Blue Ridge Parkway, within sight of Purgatory Mountain top, Tolley's last earthly home.

Bear Tolley's funeral was held in the Buchanan Baptist Church, with the Reverend Thomas R. Morris officiating, and he was laid to rest in Fairview Cemetery, Buchanan.

As the soul of this great hunter goes from strength to strength in that Heavenly Paradise, perhaps he still remembers the musical voices of at least two of his faithful hounds—"Old Faithful" and "Scout."

DESTROY OBSOLETE PESTICIDE PUBLICATIONS!

OBSOLETE publications that recommended use of 2,4, 5-T, aldrin, dieldrin and certain mercury compounds are being destroyed by Virginia Tech and all Extension agents.

Anyone who has copies is urged to toss them out or preferably destroy them.

The publications are:

"Poison Ivy, Poison Oak and Poison Sumac"; "Culture and Varieties of Spring-Sown Red Oats"; "Rice Diseases"; "Growing Seed Flax in the North Central States"; "Culture of Oats in the Western States"; "Chemical Control of Brush and Trees"; Water Weed Control on Farms and Ranches."

Also, "Using Phenoxy Herbicides Effectively"; "Controlling Tomato Diseases"; "Wild Ducks on Farmland in the South"; "Better Lawns"; "Lawn Diseases"; "Lawn Weed Control with Herbicides"; "Muskmelon Culture"; "Commercial Potato Production"; "Herbicide Manual for Noncropland Weeds."

Plus, "Rice in the United States"; "Weeds and Their Control in Rice Production"; "Wild Garlic: Its Characteristics and Control"; "Suggested Guide to Weed Control"; "Barley: Origin, Botany, Culture, Winterhardiness, Genetics, Utilization, Pests."

Plus, "Scab of Cereals and How to Control It"; "Controlling Phony Disease of Peaches"; "Russian Olive for Wildlife and Other Conservation Uses"; "3 Leaves Mean Poison Ivy"; "Seed Treatments for Control of Disease" (from 1961 Yearbook).

The following publications which recommended uses of DDT are also discontinued and should be destroyed.

"The European Corn Borer—How to Control It"; "Wireworms on Irrigated Lands in the West—How to Control Them"; "The House Fly"; "Pepper Production"; and "Control of Grape Diseases and Insects in Eastern U. S."

Replacement publications are being printed.

V.P.I. and S.U. *Extension Service News.*

Muskies (Continued from page 7)

The James was among several streams getting these so-called "exotics" in the same period that they were stocked in a few lakes, principally Smith Mountain. They also were placed in the New and Shenandoah Rivers.

Of the 800 put in the James in Botetourt, approximately 400 were stocked near the U. S. Highway 11 bridge at the northern end of town. An equal number were placed near the old Indian Rock ferry downstream from Buchanan.

Those creating all the excitement upstream from Buchanan obviously migrated from the Buchanan bridge stocking of 1967.

Last summer, Warden Monaghan said, Buchanan residents caught several in the section of the river flowing through the town. They'd attained lengths of 26 to 27 inches.

Monaghan thinks they are spawning "somewhere" but isn't sure just where.

Paul Amos, who with his father proved first just how large the muskies have grown, shares Monaghan's view that they may be reproducing. Amos said he caught and released about eight last year around 10 inches long.

He added that he knows of other anglers who've pulled out what they thought were chain pickerel the last couple of years, but which probably were young muskies.

The scores of anglers attracted to the James hope the muskies *have* caught on. They'd like to see a repeat each February and March of the wild action that broke loose last year.

Richard Ewers caught limit in half an hour.

Those Starlings!

By CARSTEN AHRENS
Pittsburgh

THE European starling in America is an example of man's numerous attempts to aid nature by transplanting species of plants and animals from one area of the globe to another. There are, of course, many happy examples, such as the introduction of the eucalyptus tree to Africa, the bringing together of wild grasses from many parts of the world to breed a superior rustless wheat, or importing marigolds to America. However, like the importation of starlings, there have been disastrous results from such activities.

In Europe, the starling is a modest citizen, dutifully consuming tons of insects yearly. Here in the States, they add almost anything they can swallow, including considerable grains and fruit, to their usual insectivorous diet. Then, too, something about the New World has made them noisily argumentative, quarrelsome, dirty, and amazingly reproductive. While most of our songbirds have but one or two broods yearly, starlings have six nestings or even more if the winter is mild.

Last summer I witnessed a truly startling attack by two starlings on a flicker and her nest. The two poked their heads down the tunnel and actually dragged the far-larger bird from her home. Then the fight continued as the three birds fell to the ground from the limb high overhead. As soon as the coast was clear, the flicker returned to her tunnel only to be hauled out and vigorously birdhandled. This happened over and over again. A week passed before the flicker learned the hard way to stay out of her own nest, but she haunted the area for the rest of the season.

The starling population explosion in America began in 1890 when 60 birds were imported and liberated in New York City; by 1950, they had taken over the United States from coast to coast. I've seen flocks of the noisy birds swoop down on a peach orchard, leaving holes in the cheeks of the ripening fruit before they could be frightened away. On the other hand, I have a farmer friend who puts up starling houses for he believes the birds are most valuable to him in controlling insect pests. He also hears dulcet grace notes among their harsh phrases.

Last summer in a campground I watched a phenomenon that was new to me even after years of birdwatching. Several times a week a mixed group of birds . . . all birds of dark plumage . . . would systematically go over the grounds consuming any scraps of food left by the tent or trailer people. And the careless camper who left cereal, potato chips, cookies on his table would find on his return the boxes torn open and the contents gone. While the majority of the birds in these clean-up parties (or raiding gangs) were starlings, there were also purple grackles, red winged blackbirds, rusty blackbirds, and cowbirds. The various species seemed to be traveling together as a working unit and, as far as I could tell, with a minimum of friction.

The starling family is a vast one, almost worldwide in distribution. Among its ranks are the raucous Mynas that can mimic human speech, enunciating far more perfectly than parrots.

ON THE LIGHTER SIDE

By TONY PHOENIX

DOES AGNEW APPROVE OF LONGHANDLES?

THIS is a story about backwoods prejudice and great enlightenment. About a man who once was blind but now sees. The story of one man's (and a little boy's) progress from darkness into light. In short, the old man learned something and wants to crow about it.

What I'm going to brag about happened more than two years ago. Spiro Agnew was running for vice president, and since he was there that day as the great revelation unfolded, I remember the details pretty clear. As you'll see, I've always felt he was aware that something unusual was going on, and was, therefore, a part of it.

More than likely every hunter reading this already knows what I'm about to reveal. This, then, is for those unfortunate few who, like myself, grew to adulthood without knowing all they should.

What I learned that cold evening two years ago is this: the lightweight, inexpensive thermal underwear now on the market will keep you warmer than four layers of clothing. "Foul!" you cry. "That's not the type of thing that'll change a man's life. That's not coming from darkness into light!"

But it is. Let me explain.

For years I've tried to wear layer on layer of clothes to keep warm when the temperature was freezing and I was to spend a day on a deer stand or floating an icy river for ducks. There is a limit, however, to how much you can bundle up. After the third and fourth layers, buttons begin to pop, zippers won't zip, and walking 100 yards is about the same as climbing Old Rag Mountain. I froze anyway, after the first hour or two of exposure.

Never again. I've got it whipped now, after all these years. I learned that one set of thermal underwear can replace three sets of clothing, and I've been a changed man. Hunting and fishing in cold weather has become a pleasure. In the process of change, I also got rid of a childhood prejudice. Let me explain that one too.

I've known for years that hunting and fishing magazines praise the virtues of "thermalwear" in cold weather. But I probably got the wrong idea about it all as a youngster on a farm in southwest Virginia. I knew a man who jumped into his red flannel longhandles on the first cool morning of fall, and didn't take them off until every single robin had returned in the spring. If he had another pair for a change, he kept them to be buried in. He just never changed. As a result, it was no trouble to tell he was coming down the road before he ever shuffled into sight, especially if the wind was blowing just right. The dogs would raise up, sniff the air, shake themselves violently, and go behind the house.

Since those impressionable days of youth, I've had an aversion to longhandles, even though the magazines called them something else.

But finally, two years ago just before hunting season opened, I bought two sets in a city where no one would know me. One set was for me and the other for my young son. That same evening Spiro Agnew came to Virginia and, in fact, flew into a small airport near our home. He was to speak at a large dinner meeting that night.

Feeling that the boy should be exposed to some of the political realities of life and not just to hunting and fishing, I decided to take him to the airport to see Governor Agnew come in. The weather promised to turn bitter cold after dark, so it seemed a good time to try our new thermalwear. Besides (I reasoned), no one could tell in the dark that we were wearing what came suspiciously close to being longhandled underwear.

Well, my son and I learned something about new-fangled, scientific clothing that night while waiting in the cold with a couple hundred other people. Everyone else in the crowd looked chilled and shivery. They stomped around and flapped their arms a lot. The boy and I were perfectly comfortable, even without the usual three layers of clothing. The sudden cold had caught everyone else with their flaps down, so to speak.

And here's where the man who was to become vice president of the United States fits into the picture. Seeing the friendly but chilled crowd that had waited so long for his arrival, he broke from the Secret Service men and walked briskly to the group. Smiling, shaking hands, a word here and there, he came down the line.

I choked up. Suppose this man who could easily be the next vice president suspected that we were wearing longhandles? Maybe he wouldn't even want our support.

I could have placed the wrong interpretation on what happened next. I admit that. But it seems to me that he smiled a special smile as he stopped and looked at us. He shook hands with me. Then he leaned over to the eight-year-old boy, said something that was lost in all the noise and confusion, and then patted the boy on the head. He straightened up (he's a very big man), hesitated for a split second, then broke into a beaming smile as he took a final look at the boy, then went on down the line.

My interpretation could have been wrong, as I said, but I believe he was saying to himself, "Now here's a father and son team with enough sense to . . . well, to wear thermal underwear in weather like this."

The Sapsucker

By JOHN W. TAYLOR
Edgewater, Maryland

Bird of the Month:

THE sapsucker is the only member of the woodpecker tribe with habits not completely beneficial. Its tendency to girdle trees, and thus eventually kill them, gives the bird a bad reputation. It is not wholly deserved, however, since the bird does much more good than harm, consuming large numbers of insects, including the notorious bark beetles.

The work of the sapsucker is easily recognized: no other woodpecker has the habit of sinking holes in such straight lines, in regular series, vertically or around the trunk. Its fondness for sap, as well as its taste for the nutritious inner bark, has resulted in this unwoodpecker-like trait. The bird visits its tappings at regular intervals, collecting the drippings as they flow. Maples and birches are favored trees, and an especially productive specimen will be tattooed with punctures completely around the trunk and on the main branches.

Most of the trees so marked seem not to have been affected, and continue to grow in good health. In some cases, though, the bark is destroyed to the extent that serious injury is done to the tree.

In Virginia the sapsucker is primarily a winter visitor, being fairly common from October through April. It seems most conspicuous in autumn, for it is then that it forsakes the heavily forested areas for the shade trees about towns and farmyards. In the fall, too, it seems more vocal, frequently uttering a slurring "hee-yew," which is remarkably similar to the meowing of a house cat. Or it may be that we notice them in fall simply because they haven't been around all summer.

The principal breeding range of the sapsucker lies farther to the north, though Virginia can claim a few nesting pairs in the high mountains, particularly where there are remnants of the original spruce forest. The nest, like that of other woodpeckers, is placed in an excavation, usually dug to a depth of a foot or more. In it are placed the five to seven white, unmarked eggs.

The male sapsucker in full plumage is a striking combination of boldly patterned blacks, whites and reds, with a suffusion of yellow on the breast. The male is fiery red on the forehead and throat, whereas the female has a white throat. Young birds lack the bright colors and are a confusing mixture of dull browns and yellows. In all plumages, however, the sapsucker offers one easily noticed field mark: a long white wing patch, distinctive both when the bird is in flight and at rest.

Edited by HARRY GILLAM

Repeat Turkey

Ralph Steelman of Virginia Beach apparently has the Augusta County turkeys figured out as this 14½ pound gobbler attests. He bagged a 15 pounder at the same place the year before.

Iron Shot No Answer to Waterfowlers' Prayer

Soft iron shot has long been lauded as the answer to the lead poisoning problem where shot accumulates in shallow marshes and is in turn eaten by ducks, causing the fatal malady. Soft iron can be manufactured with the ballistic qualities and killing qualities of lead shot, although it is not routinely manufactured in this grade and the process is somewhat unreliable. Test firings reveal, however, that barrel and choke damage is evident after 200 to 1000 rounds have been fired, depending on the type of gun and choke used. The iron shot has the further disadvantage of hardening with age, making shot stored for a year or more sure to cause immediate damage to barrels. Although it may still be the ultimate solution to this problem, iron shot apparently has many technical problems that must be overcome before it will be found on sporting goods dealers' shelves.

Get Your Packrat Hat

Atlantic Headwear Manufacturing Company in Richmond has recently entered a license agreement with the manufacturers of Rebel lures to produce a line of hats and caps featuring the Rebel Packrat Society emblem. The Packrat Society is dedicated to the fight to unlitter America. After concluding that pollution and litter, if not controlled, could put fishermen and lure manufacturers alike out of business within 15 years, the company decided to devote its major promotional efforts to cleaning up America's waters. Party hats and caps are available at all leading sporting goods stores. Applications for joining the Packrat Society may be obtained by writing the Plastic Research and Development Corporation, 3601 Jenny Lind Road, Fort Smith, Arkansas 72901.

Northern Virginia Bass

These five largemouths were caught by James W. Blevins of Manassas.

Soil Scientist Sees Environment Cleaned by Tomorrow's Technology

Contrary to pessimistic projections of the future, this country will be less polluted in a hundred years than it is today because we will have learned to turn potential pollutants to beneficial use. Dr. Doral Kemper, a U. S. Department of Agriculture soil scientist, reported to fellow members of the Agricultural Research Institute meeting in Arlington. Dr. Kemper, director of U. S. Soils Laboratory of USDA's Agricultural Research Service at Beltsville, Md., said that, with a few exceptions, potential agricultural pollutants may also be sources of fertilizers.

Historically, Dr. Kemper said, soil has been considered the normal disposal medium for man's refuse. Natural processes in soils eventually decompose organic materials to carbon dioxide and water, and other components which form much of the basic fertility of soils.

Materials added to the soil become pollutants only when (1) they are present in amounts so large that they interfere with the normal function of the soil to grow plants, or (2) they adversely affect the quality of plants grown for animal or human consumption, he added.

Sewage emptied into a river is a pollutant. But applied to land in the right amount, it is filtered, purified, and converted into clean water for recharging underground water supplies. At the same time, properly treated sewage waters can be used for nonfood crop irrigation —on pasture and hay crops.

New Equipment Recycles City Wastes

Municipal handling of wastes and refuse may soon be made into a paying proposition, according to the Wildlife Management Institute. A demonstration by the Black Clawson Company of Middletown, Ohio, unveiled new equipment capable of separating paper fiber, ferrous metals, and glass.

The company said that a 1,000-ton-a-day plant that costs $8,500,000 can produce 370 tons of industrial materials a day that are worth $8,600 at prevailing prices. Daily cost of operating the plant is $2,900 ($2.90 per ton).

Black Clawson officials say that a "hydrapulper" is the heart of the system. Unsorted city garbage is automatically pulped and all metal, glass and fiber removed. Water from organic material is then clarified and recycled for use in the system. Remarkably little material remains at the end of the operation. The cost of an adequate plant now being installed in an Ohio community of 10,000 is $1,750,000 or about $175 per person. The plant will have a daily capacity of 150 tons.

Smith Mountain String

This string of largemouth bass ranging from 16 to 18 inches long were taken from Smith Mountain Lake by Mr. & Mrs. B. T. Nalls of Roanoke. They caught them while trolling during the middle of the day.

Edited by ANN PILCHER

Diana Timberlake Captures Gold Medal in World Shooting

The Gold Medal U.S. Ladies Standard Rifle Team of the 40th World Shooting Championships at Phoenix, Arizona: center platform (left to right)—Margaret Murdock, Tricia Foster and Diana Timberlake. On the left platform, the Soviet Union Silver Medal Team: (left to right)—Tatyana Ratnikora, Lucia Fagereva, and Yelena Zkharchemko. On the right platform, the East German Bronze Medal Team (left to right) of Marga Nabel, Gabrifle Riedel and Gudrun Merlan.

Diana Timberlake, a 1968 graduate of Fort Hunt High School, Alexandria, Virginia, and currently attending East Tennessee State University, Johnson City, Tennessee, captured a gold medal at the 40th World Shooting Championships held in Phoenix, Arizona, in October when the U.S. Ladies International Smallbore Team pulled off a stunning upset in beating the Soviet Union and nine other national ranking teams of the 53 nations competing.

Lead by Capt. Margaret Murdock of the U.S. Army International Team with a 571x600, Diana Timberlake with a 558x600, and Tricia Foster of Columbus, Georgia, with a 554x600, the U.S. team tallied a 1683x1800 to top the USSR ladies by 12 points. The winning score also established a new world international smallbore ladies team three position record.

Environmental Concern

STATE YOUTH COUNCIL REPORT

Youthful concern for solid waste and visual pollution problems was particularly evident in the Youth Advisory Council's report last fall to Virginia's Governor. The report contained such suggestions as recycling wastes; the state's instituting controls, standards and financing for waste disposal; making trash containers imperative in cars and gas stations; aiming litter laws more directly at manufacturers; phasing out non-returnable pollutants such as tin cans and bottles; streamlining red tape for abandoned car disposal; consideration by state officials of billboard zoning and proportionate licensing fees; environmental education introduced in primary and secondary school programs.

NATION'S SCHOOLS OFFERED ENVIRONMENTAL PROGRAM

Recently, the U.S. Department of Interior announced a National Environmental Study Area program sponsored by the National Education Association and the Interior Department. The program offers a comprehensive and far-reaching environmental education opportunity for the nation's school systems. The environment itself (ranging from national parks and wildlife areas to inner city parks) would be utilized as classrooms for students of all ages and grade levels to study ecology.

The NESA program was developed by the National Park Service and is now shared by the Bureau of Sport Fisheries and Wildlife, the Bureau of Land Management, and the Bureau of Reclamation, which are adding their lands and skills to the educational training package.

NEA's Association of Classroom Teachers has published a guidebook for teachers and school administrators who want to set up environmental study area programs. The program is practical for every school district in America. The guidebook, MAN AND HIS ENVIRONMENT: AN INTRODUCTION TO USING ENVIRONMENTAL STUDY AREAS, is available from NEA Publications, 1201 16th St., N.W., Washington, D. C. 20036, for $1.75.

INSTITUTE'S NEW ENVIRONMENTAL LEAFLET

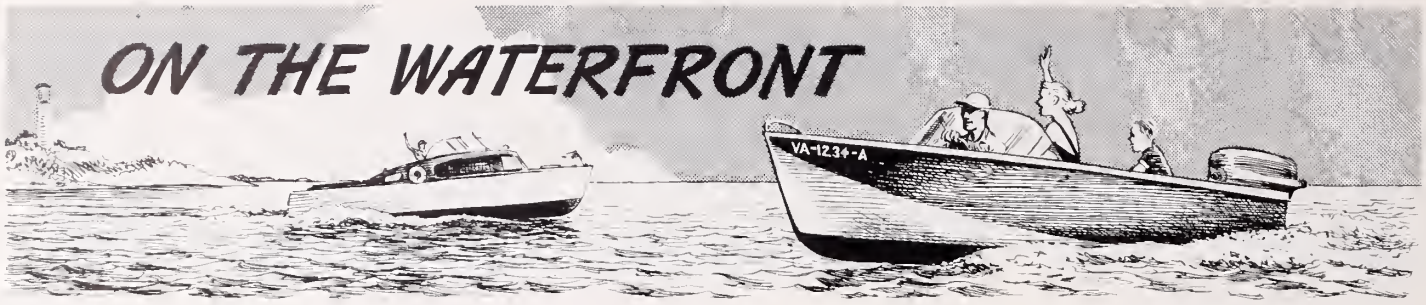
A leaflet designed to provide information on the place of wildlife in the new sphere of environmental concern has been released by the Wildlife Management Institute, 709 Wire Building, Washington, D. C. 20005. Sample copies of "Wildlife—the Environmental Barometer" (offered at cost to conservation agencies and associations, schools, and youth organizations) may be obtained by writing to the Institute.

Right on the Mark

This 85 lb. doe fell about 150 yards from where T. G. Mace placed an arrow deep in its shoulder at a distance of 25 yards. The 14-year-old bowhunter lives in Staunton.

Slippery Prize

Dana Ragland was pleased with his Sunday afternoon catch from Laurel Pond in Henrico County on October 18: 4½ and 6 lb. largemouth bass. The latter gave him a good fight, then slipped onto the bank when the knot in the line to the hook gave way. Dana had to grab the flopping fish and sit on it to keep it from flipping back into the pond. The 15-yr.-old tenth grader, a student at Hermitage High, planned to try his hand at mounting the trophies for his bedroom wall.



Edited by JIM KERRICK

Know-How and Courtesy Prevent Ramp Congestion

Launching ramp congestion can build up fast. All it takes is one inexperienced or thoughtless person. The following tips on trailering and launching will help you become a proficient trailer handler and avoid the sneers of impatient boatmen waiting in line to launch their boats.

Trailer manufacturers specify load capacities for each model. Stay within these limits, and your rig will be easier to tow, launch and load. Be sure to include the weight of the motor and assorted gear when you're adding up the total.

Adjust Rollers

Have your dealer correctly adjust the trailer rollers to fit the contour of the hull. Besides protecting the boat from distortion, your rig will slide on and off the trailer easier.

Surprisingly, many boatmen struggle and swear because they don't understand the correct operating procedures of trailer mechanisms. If you have any questions, ask your marine dealer. It's not a bad idea to have him demonstrate the correct technique several times.

If you are inexperienced in towing a trailer, take a few practice runs. You'll notice it will take longer to stop, and acceleration will be slower. Add a couple of inches when turning a corner so the trailer will clear without hitting the curb. An empty parking lot is a good practice field for perfecting trailering techniques.

Backing Trailer

When backing a trailer, remember that the car's steering wheel must be turned in the opposite direction from the way you want the trailer to go. If you want the trailer to go to the right, turn the wheel to the left and vice versa. This is the secret of expert trailer handling. Practicing backing before actually trying it on the launching ramp will save you confusion and embarrassment.

Make sure your rig is ready to go when you're on the ramp. Boating gear should be transferred into the boat while you're waiting. Make sure the drain plug is installed.

Launching is a two-man job, with one person acting as a guide for the driver. Line your rig up at a right angle to the water. Back up slowly and stop a few feet from the edge. Remove the tie-downs, tilt the outboard motor up and unlock the bow winch.

Launching Procedures

Back up again until the trailer wheels are one or two inches into the water. Set the emergency brake and put the car in gear. Have your guide hold onto a lead line from the bow. This will prevent the boat from drifting into open water when it slides off the trailer.

In Case Of Fuel Leaks

Leakage or spillage of any liquid fuel is dangerous in a boat; that of gasoline, or "LP" gas, is deadly peril. Any odor of gasoline inside the boat indicates danger of explosion and fire. Take every precaution to get the gas vapor out before allowing any open flame or spark on the boat.

Gasoline tank installations should be made as approved by the Coast Guard, underwriters, and Yacht Safety Bureau, with fill pipe leading to a tight deckplate on an outer deck and vent pipe carrying fumes outside the hull. The Coast Guard's "Recreational Boating Guide" (Superintendent of Documents, U.S. Government Printing Office, Washington 25, D.C., Price 40¢) illustrates good and bad tank installations. Tanks should also be electrically grounded.

While fueling, all hull openings such as hatches, ports, etc., should be closed, galley fire out and no smoking allowed.

Gas leaks inside the boat may be caused by bad fittings, cracked tubing or other mechanical failures. Be sensitive at all times to the distinctive odor of raw gasoline aboard a boat. Before starting the motor after a period of idleness, open the hatches and sniff around in the engine and tank compartments. Be sure there is no gasoline odor, and leave the hatches open a few minutes.

A number of devices to detect flammable vapors in the bilge and warn of their presence by visual or noise signals at the control station are excellent safety devices but not infallible substitutes for your own nose and caution. The same is true of electric blowers which exhaust stagnant air from the engine compartments. Run the blower for five minutes before starting the engines. Have the blower switch tied into the ignition so the engine can't be started until the blower is operating for five minutes or more.

If a gasoline leak or the presence of any explosive mixture in the bilge is suspected, shut down all engines and other machinery immediately.

Shut fuel supply valves at the tanks.

Put out all galley or heating stove fires.

Disconnect the main battery switch—which should be a completely enclosed, vapor-proof, underwriters-approved switch, located outside areas where gas may collect.

Allow no smoking on board.

Don't start the electric bilge pump or other motors.

Open all hatches, ports and doors. Pull up all floorboards to let air circulate in the bilge.

Gasoline vapor, heavier than air, will settle and lie in low parts of the bilge. Don't assume it's gone just because you can't smell it in the cabin. Sniff around the bilge.

DON'T USE MATCHES—Incredibly, some people still do that when looking for a gas leak. Don't even use a flashlight—they have been known to set off gas vapor, probably due to a defective switch.

Find the source of the leak and try to stop it. If you can repair the leak, make it thoroughly tight and safe, you can get under way after all trace of vapor is out of the boat. But if you can't stop the leak, don't start your engine. Wait for a tow (or sail home if in an auxiliary). Have the tank pumped out and permanent repairs made before you touch an electric switch, light the stove or smoke.

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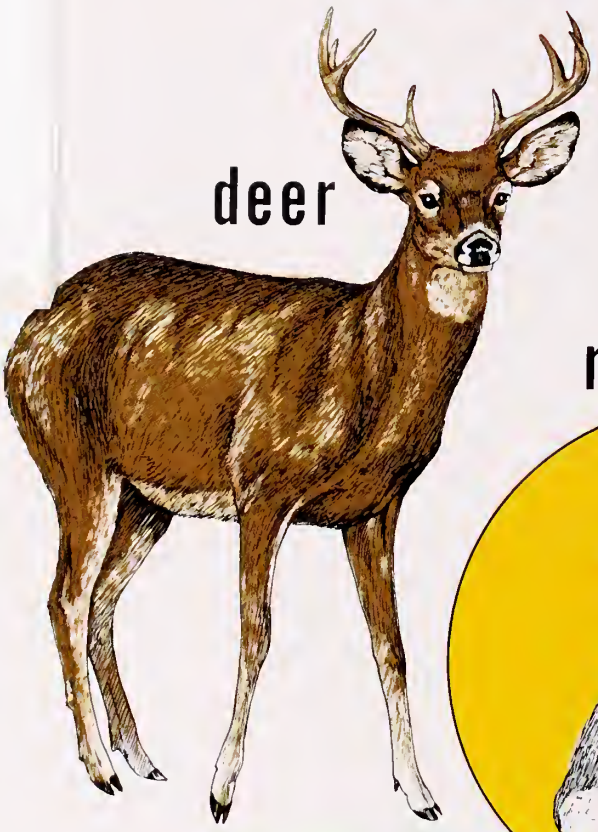

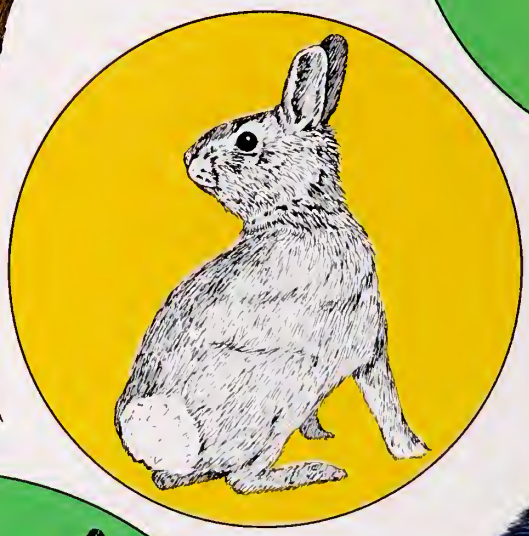

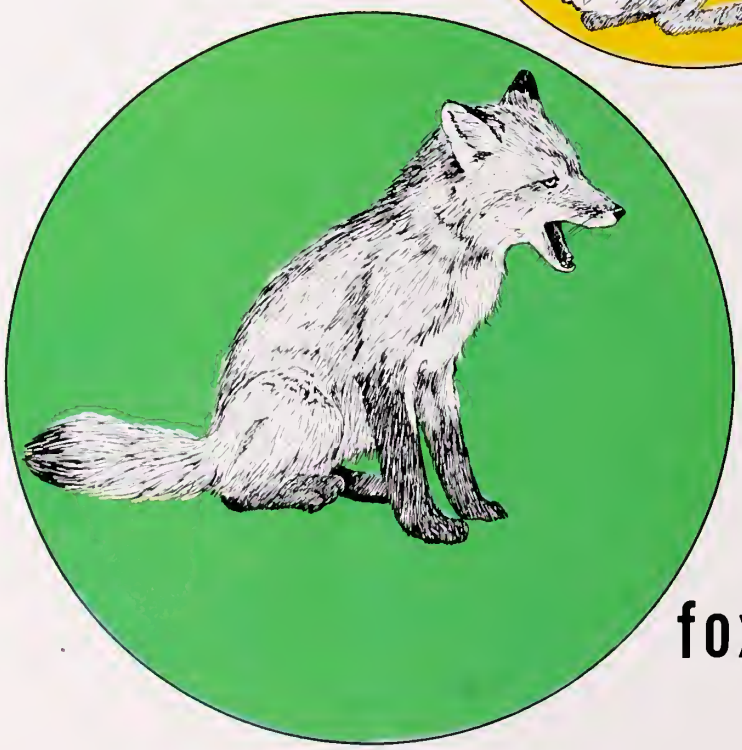

None of these animals may be hunted, killed, chased or captured except during prescribed open seasons, and may not be held in captivity except under a game breeder's or other appropriate permit. Permits are not issued to hold game animals in captivity as pets.